IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): A hyperframe synchronization processing apparatus for establishing synchronization of a hyperframe which has a plurality of first frame groups each including one or a plurality of first frames and a plurality of second frame groups each including one or a plurality of second frames distinguishable from the first frames and in which the first frame groups and the second frame groups appear alternately, the hyperframe synchronization processing apparatus comprising:

a difference calculator configured to calculate differences between the number of the first frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups which follow these respective first frame groups in the received hyperframe;

a storage configured to sequentially store the differences calculated by the difference calculator; and

a synchronizer configured to establish the synchronization of the hyperframe by using the differences stored in the storage.

Claim 2 (Original): The hyperframe synchronization processing apparatus according to claim 1, wherein the synchronizer establishes the synchronization of the hyperframe by detecting a unique sequence capable of specifying a position in the hyperframe out of sequences of the differences between the number of the first frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups.

Claim 3 (Original): The hyperframe synchronization processing apparatus according to claim 2, wherein the synchronizer establishes the synchronization of the hyperframe by further using the number of times the first frames have been received consecutively.

Claim 4 (Original): The hyperframe synchronization processing apparatus according to claim 1, wherein the first frame is the top frame in the hyperframe.

Claim 5 (Original): The hyperframe synchronization processing apparatus according to claim 1, wherein the second frame is the top frame in the hyperframe.

Claim 6 (Currently Amended): The hyperframe synchronization processing apparatus according to claim 1, wherein the first frame is an FEXT frame and the second frame is a NEXT frame in at least one of ITU-T Recommendations ~~G. 992. 1 and G. 992. 2~~ G.992.1, version from 2004, and G.992.2, version 3.

Claim 7 (Currently Amended): The hyperframe synchronization processing apparatus according to claim 1, wherein the first frame is a NEXT frame and the second frame is an FEXT frame in at least one of ITU-T Recommendations ~~G. 992. 1 and G. 992. 2~~ G.992.1, version from 2004, and G.992.2, version 3.

Claim 8 (Original): A hyperframe synchronization processing apparatus for establishing synchronization of a hyperframe which has a plurality of first frame groups each including one or a plurality of first frames and a plurality of second frame groups each including one or a plurality of second frames distinguishable from the first frames and in which the first frame groups and the second frame groups appear alternately, the hyperframe

synchronization processing apparatus comprising:

a first difference calculator configured to calculate differences between the number of the first frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups which follow these respective first frame groups in the received hyperframe;

a first storage configured to sequentially store the differences calculated by the first difference calculator;

a second difference calculator configured to calculate differences between the number of the second frames included in the respective second frame groups and the number of the first frames included in the respective first frame groups which follow these respective second frame groups in the received hyperframe;

a second storage configured to sequentially store the differences calculated by the second difference calculator;

a synchronizer configured to establish the synchronization of the hyperframe by using the differences stored in the first storage and the second storage.

Claim 9 (Original): The hyperframe synchronization processing apparatus according to claim 8,

wherein the synchronizer establishes the synchronization of the hyperframe by using a sequence capable of establishing the synchronization of the hyperframe in a shorter period out of:

a unique sequence capable of specifying a position in the hyperframe out of sequences of the differences between the number of the first frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups which follow these respective first frame groups in the hyperframe; and

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a unique sequence capable of specifying a position in the hyperframe out of sequences

of the differences between the number of the second frames included in the respective second

frame groups and the number of the first frames included in the respective first frame groups

which follow these respective second frame groups in the hyperframe.

Claim 10 (Original): The hyperframe synchronization processing apparatus according

to claim 9, wherein the synchronizer establishes the synchronization of the hyperframe by

further using the number of times the first frames and/or the second frames have been

received consecutively.

Claim 11 (Original): The hyperframe synchronization processing apparatus according

to claim 8, wherein the first frame is the top frame in the hyperframe.

Claim 12 (Currently Amended): The hyperframe synchronization processing

apparatus according to claim 8, wherein the first frame is an FEXT frame and the second

frame is a NEXT frame in at least one of ITU-T Recommendations ~~G. 992. 1 and G. 992. 2~~

G.992.1, version from 2004, and G.992.2, version 3.

Claim 13 (Original): A hyperframe synchronization method for establishing

synchronization of a hyperframe which has a plurality of first frame groups each including

one or a plurality of first frames and a plurality of second frame groups each including one or

a plurality of second frames distinguishable from the first frames and in which the first frame

groups and the second frame groups appear alternately, the hyperframe synchronization

method comprising:

a difference calculating step of calculating differences between the number of the first

frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups which follow these respective first frame groups in the received hyperframe;

a storing step of sequentially storing the differences calculated in the difference calculating step; and

a synchronizing step of establishing the synchronization of the hyperframe by using the differences stored in the storing step.

Claim 14 (Original): The hyperframe synchronization method according to claim 13, wherein in the synchronizing step, the synchronization of the hyperframe is established by detecting a unique sequence capable of specifying a position in the hyperframe out of sequences of the differences between the number of the first frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups.

Claim 15 (Original): The hyperframe synchronization method according to claim 14, wherein in the synchronizing step, the synchronization of the hyperframe is established by further using the number of times the first frames have been received consecutively.

Claim 16 (Original): The hyperframe synchronization method according to claim 13, wherein the first frame is the top frame in the hyperframe.

Claim 17 (Original): The hyperframe synchronization method according to claim 13, wherein the second frame is the top frame in the hyperframe.

Claim 18 (Currently Amended): The hyperframe synchronization method according to claim 13, wherein the first frame is an FEXT frame and the second frame is a NEXT frame in at least one of ITU-T Recommendations G. 992. 1 and G. 992. 2 G.992.1, version from 2004, and G.992.2, version 3.

Claim 19 (Currently Amended): The hyperframe synchronization method according to claim 13, wherein the first frame is a NEXT frame and the second frame is an FEXT frame in at least one of ITU-T Recommendations G. 992. 1 and G. 992. 2 G.992.1, version from 2004, and G.992.2, version 3.

Claim 20 (Original): A hyperframe synchronization method for establishing synchronization of a hyperframe which has a plurality of first frame groups each including one or a plurality of first frames and a plurality of second frame groups each including one or a plurality of second frames distinguishable from the first frames and in which the first frame groups and the second frame groups appear alternately, the hyperframe synchronization method comprising:

a first difference calculating step of calculating differences between the number of the first frames included in the respective first frame groups and the number of the second frames included in the respective second frame groups which follow these respective first frame groups in the received hyperframe;

a first storing step of sequentially storing the differences calculated in the first difference calculating step;

a second difference calculating step of calculating differences between the number of the second frames included in the respective second frame groups and the number of the first frames included in the respective first frame groups which follow these respective second

frame groups in the received hyperframe;

a second storing step of sequentially storing the differences calculated in the second

difference calculating step;

a synchronizing step of establishing the synchronization of the hyperframe by using

the differences stored in the first storing step and the second storing step.

Claim 21 (Original): The hyperframe synchronization method according to claim 20,

wherein in the synchronizing step, the synchronization of the hyperframe is

established by using a sequence capable of establishing the synchronization of the

hyperframe in a shorter period out of:

a unique sequence capable of specifying a position in the hyperframe out of sequences

of the differences between the number of the first frames included in the respective first

frame groups and the number of the second frames included in the respective second frame

groups which follow these respective first frame groups in the hyperframe; and

a unique sequence capable of specifying a position in the hyperframe out of sequences

of the differences between the number of the second frames included in the respective second

frame groups and the number of the first frames included in the respective first frame groups

which follow these respective second frame groups in the hyperframe.

Claim 22 (Original): The hyperframe synchronization method according to claim 21,

wherein in the synchronizing step, the synchronization of the hyperframe is established by

further using the number of times the first frames and/or the second frames have been

received consecutively.

Claim 23 (Original): The hyperframe synchronization method according to claim 20,

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wherein the first frame is the top frame in the hyperframe.

Claim 24 (Currently Amended): The hyperframe synchronization method according to claim 20, wherein the first frame is an FEXT frame and the second frame is a NEXT frame in at least one of ITU -T Recommendations ~~G. 992. 1 and G. 992. 2~~ G.992.1, version from 2004, and G.992.2, version 3.